DOCUMENT RESUME

ED 300 165 RC 016 774

AUTHOR Taylor, J. Edward; Espenshade, Thomas J.

TITLE Foreign and Undocumented Workers in California Agriculture.

INSTITUTION Urban Inst., Washington, D.C.
SPONS AGENCY Ahmanson Foundation, Beverly Hills, CA.; Atlantic Richfield Foundation, Los Angeles, CA.; Ford Foundation, New York, N.Y.; Resources for the Future, Inc., Washington, DC. National Center for Food and Agricultural Policy.; Weingart Foundation, Los Angeles, CA.
REPORT NO PDS-87-2
PUB DATE Jun 87
NOTE 32p.
AVAILABLE FROM Library/Information Clearinghouse, The Urban Institute, 2100 M St., N.W., Washington, DC 20037.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Agricultural Laborers; *Employment Patterns; *Farm Labor; Federal Legislation; *Foreign Workers; Harvesting; Labor Supply; Occupational Surveys; *Undocumented Immigrants; Wages
IDENTIFIERS *California; Immigration Law; *Immigration Reform and Control Act 1986

ABSTRACT

The Immigration Reform and Control Act of 1986 contains controversial provisions to allow temporary "replenishment" farmworkers to enter the United States to harvest perishable crops. This paper describes the role of legal and illegal foreign workers in California agriculture in relation to these provisions and the assumptions on which they rest. A 1983 survey of 1286 farmworkers in 37 California counties showed that 73% of all farmworkers were foreign. Citrus and other tree fruits had higher than average concentrations of foreign farmworkers (93% and 84%), while grapes had a below average concentration (67%). The relative concentration of illegal workers was (1) significantly above average for citrus, other tree fruits, and grapes, and significantly below average for field fruits and vegetables; (2) significantly above average for harvesting, tree thinning, and irrigating, and significantly below average for hoeing, crop sorting, operating machines, and serving as a foreman; and (3) significantly above average for southern San Joaquin valley and significantly below average for coastal and inland southern California. Compared to other regions, the San Joaquin valley had the highest unemployment rate and among the lowest hourly earnings for legal workers, suggesting that undocumented aliens may be displacing low skilled legal workers and depressing wage rates. This is contrary to growers' contentions, as is the lack of evidence that perishable crops depend more heavily on undocumented workers than other crops. The report contains 7 statistical tables, 13 references, and 21 related titles from the Urban Institute. (SV)

ED300165

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
L. Williamson
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Foreign and Undocumented Workers in California Agriculture

by

J. Edward Taylor
Thomas J. Espenshade

The Urban Institute
2100 M Street, N.W.
Washington, D.C. 20037

PDS-87-2
June 1987

This Policy Discussion Paper was prepared as part of The Urban Institute's larger project, Study of the Impacts of Immigration in California, funded by the Weingart Foundation, the Atlantic Richfield Foundation, the Ahmanson Foundation, and the Times Mirror Foundation. Support for this portion of the project was also provided by grants from the National Center for Food and Agricultural Policy, Resources for the Future, Inc., and the Rural Economic Policy Program of the Ford Foundation. We are greatly indebted to Philip Martin and Richard Mines for their generous assistance and guidance, and to Tracy Ann Goodis for her helpful comments on earlier versions of this paper. Conclusions or opinions expressed in Institute publications are those of the authors and do not necessarily reflect the views of other staff members, officers, or trustees of the Institute; advisory groups; or any organizations that provide financial support to the Institute.

RC016774

FOREWORD

Issues concerning the level and composition of immigration to the United States have assumed prominent positions on the agendas of many policymakers. Perhaps nowhere are immigration's effects more keenly felt than in California, where one-quarter of all foreign-born persons in the United States currently reside.

This Policy Discussion Paper series is aimed at improving the quality of the policy-making process through a broad distribution of research findings on the consequences of immigration to California. These dissemination activities are part of The Urban Institute's larger project, Study of the Impacts of Immigration in California, funded by the Weingart Foundation, the Atlantic Richfield Foundation, the Ahmanson Foundation, and the Times Mirror Foundation. Important policy issues being addressed include (a) economic and fiscal issues associated with immigration, (b) the character and tempo of assimilation processes, and (c) the impact on California of proposals for immigration reform. All major immigrant groups to California--not just Mexicans--are being included, as are the comparative effects in northern as well as in southern California.

The Urban Institute's objective is to make a positive contribution to the policy process. It is committed to getting its work into the hands of people who can use it and rely upon it to make judgments of their own on future policy directions. Related titles are listed at the end of this paper.

Thomas J. Espenshade
Director
Program in Demographic Studies

FOREIGN AND UNDOCUMENTED WORKERS
IN CALIFORNIA AGRICULTURE

Executive Summary

In November 1986, the United States Congress passed the most sweeping reform of federal immigration laws in more than two decades. The major objective of the Immigration Reform and Control Act of 1986 is to curtail the flow of illegal immigrants into the United States. But the Act contains controversial provisions to assure agricultural producers who rely most heavily on illegal immigrants to harvest perishable crops that they will not suffer unfairly from changes in U.S. immigration laws. These special provisions for agriculture rest on two assumptions that heretofore have received little attention from researchers: (1) that agriculture now relies heavily on undocumented workers to harvest perishable crops, and (2) that growers hire undocumented labor because legal farmworkers are not available to work at wages growers can afford to pay. This paper presents preliminary findings from a study of the role of undocumented workers in California agriculture. Despite the growers' contention, there is no evidence that the most perishable crops and harvest activities depend more heavily on undocumented workers than do other crops and farm tasks. Moreover, there is no evidence that growers' reliance on undocumented workers is greatest where legal labor is most costly and scarce. Indirectly, a large-scale replenishment worker program will tend to benefit all growers by exerting downward pressure on agricultural wages.

INTRODUCTION

Undocumented immigrants represent a large share of the U.S. agricultural labor force, particularly in the Southwest. The California Farm Bureau Federation believes that one-half of all field hands on the state's 82,000 farms are undocumented immigrant workers. The United Farmworkers of America, AFL-CIO, claims that the share of undocumented workers in California agriculture is even higher (Wall Street Journal, 1983).

In November 1986, the United States Congress passed the most sweeping reform of federal immigration laws in more than two decades. The major objective of immigration reform is to curtail the flow of illegal immigrants into the United States. The act provides for fines and, in flagrant cases, jail terms for employers who knowingly hire undocumented alien workers; it grants amnesty to all undocumented immigrants who can show that they lived in the United States continuously since 1982; and it will attempt to shore up the enforcement capabilities of the Immigration and Naturalization Service (INS). But it also contains controversial provisions to assure agricultural producers who rely most heavily on illegal immigrants to harvest perishable crops that they will not suffer unfairly from changes in U.S. immigration laws. The new law grants temporary resident status to an unlimited number of special agricultural workers (SAWs), illegal aliens who can prove that they worked in perishable agriculture in the United States for at least 90 days between May 1985 and May 1986. After two years these workers may apply to become permanent legal residents.

In the short run, this special farmworker legalization program will help insulate agricultural labor markets from sudden changes in the supply of undocumented immigrants resulting from the stepped-up enforcement of U.S.

immigration laws. But in the course of congressional debate on immigration reform, growers argued that agriculture would be adversely affected in the medium-to-long run unless provisions were included to ensure a steady supply of new immigrant farmworkers in the future. This is because agriculture generally is not competitive with other sectors in terms of earnings, working conditions, and stability of employment, and growers fear--justifiably, it appears--that many farmworkers will leave agriculture for more stable and better-paying urban jobs once they become legal residents.[1] Responding to these concerns, Congress included provisions for replenishment agricultural workers (RAWs) to enter the United States as temporary legal residents beginning in FY 1990 if the Secretaries of Labor and Agriculture determine that a shortage of harvest workers exists in perishable agriculture.[2]

These special provisions for agriculture rest on two assumptions that heretofore have been given little attention by researchers: (1) that agriculture now relies heavily on undocumented workers to harvest perishable crops, and (2) that growers hire undocumented workers because legal farmworkers are not available to work at wages that growers can afford to pay.

The replenishment worker provision of the new law also poses difficult questions: How many replacement workers will be permitted to enter the United States in the future, and which growers will be allowed to make use of these

---

[1]A study by Kossoudji and Ranney (1986) found that legal Mexican immigrant workers are significantly more likely to work in urban services or manufacturing than in agriculture. Other studies show that undocumented immigrants are more likely to work in urban jobs as they acquire experience and personal contacts in the United States (Massey, 1984).

[2]The mechanism for estimating possible farm labor shortfalls was not specified in the legislation. The total number of replenishment farmworkers permitted to enter the United States is capped by the number of farmworkers granted legal U.S. resident status under the SAW program.

workers? Growers who now have the greatest dependence on undocumented farmworkers face the largest potential labor shortfalls if new U.S. immigration laws are effectively enforced. If replenishment workers are granted primarily to these growers, is it safe to assume that they would not have an adverse effect on the employment and incomes of other farmworker groups (for example, U.S. citizens, SAWs, and other legal foreign-born residents)?

This paper presents preliminary findings from an Urban Institute study of the role of undocumented workers in California's agricultural sector. These findings cast some doubt on the assumptions that undocumented workers are employed mostly in harvesting perishable crops and that growers hire illegal aliens because legal workers are not available. The analysis focuses on California because one-half of all undocumented immigrants in the United States are believed to live in this state (Passel and Woodrow, 1984) and California is the principal destination for both legal and undocumented farmworkers from abroad (Ranney and Kossoudji, 1983; North and Houstoun, 1976).

THE SIGNIFICANCE OF IMMIGRATION REFORM FOR CALIFORNIA AGRICULTURE

As many as 350,000 undocumented alien farmworkers who worked in perishable U.S. agriculture for at least 90 days in each of the three years prior to May 1, 1986 could be granted temporary legal resident status under new immigration laws. These "Group 1" special agricultural workers will be entitled to adjust their status to permanent legal resident after one year. In addition, an unlimited number of "Group 2" special agricultural workers, who worked for 90 days in perishable U.S. agriculture between May 1, 1985 and May 1, 1986, will be eligible for temporary residence and will be able to apply for an adjustment to permanent residence after two years. The ceiling on Group 1 workers is equivalent to approximately one-half of the current

estimated size of the entire California agricultural workforce. Although not all of the newly legalized farmworkers will be in California, this state is home to what is far and away the nation's largest undocumented farm workforce. Because of this, it also is likely to be the major destination for replenishment agricultural workers beginning in FY 1990.

In general, the new immigration law's impact on wages and employment in farm labor markets depends on two factors: first, its effect on the availability and demand for foreign workers, and second, the extent to which foreign workers compete with or complement other workers. New immigration laws, if effectively enforced, will reduce the net supply of undocumented workers to California agriculture.[3] California's foreign farm workforce subsequently will shrink unless the number of newly legalized foreign workers (SAWs) plus the addition of legally contracted foreign farmworkers (i.e., replenishment workers or possibly H-2 workers) are sufficient to compensate for the net loss of undocumented farmworkers and the number of legal foreign farmworkers who migrate out of agriculture.[4]

---

[3]An effective enforcement of immigration laws could reduce the net supply of undocumented farmworkers in three main ways: first, by discouraging illegal aliens who are in the United States from remaining in this country; second, by discouraging workers in foreign countries (primarily Mexico) from illegally entering the United States; and third, by converting undocumented workers who qualify for legalization into legal workers. Also, if new immigration laws increase the costs and risks of working illegally in the United States, they may create incentives for undocumented workers to migrate out of agriculture into more stable and higher-paying manufacturing jobs (Taylor, 1987).

[4]California growers traditionally have not made use of "H-2" provisions in U.S. immigration law to contract legal foreign workers, claiming that the process of obtaining authorization to import temporary workers is too slow and cumbersome for their needs. One objective of the 1986 Immigration Reform and Control Act is to streamline the H-2 application process.

If new immigration laws reduce the availability of, and employers' demand for, foreign farmworkers, and if domestic substitutes for foreign farmworkers are available, then immigration reform will have two effects on farm labor markets in the short-to-medium term. First, it will tend to increase employment and earnings for local domestic workers, particularly on farms that currently depend most heavily on undocumented foreign workers.[5] Second, it will tend to increase seasonal migration of domestic workers into labor markets that currently have the highest concentrations of undocumented foreign workers. An extensive replenishment farmworker program would have the opposite effect.[6]

What would be the effect of a change in the size of the foreign and undocumented workforces on different crops, labor activities and agricultural regions in California? Some useful answers to this question can be obtained by identifying the crops and farm jobs that currently employ the highest concentrations of foreign workers in general and of undocumented farmworkers in particular, and the regions in which these crops and activities are centered. These are the crops, activities and regions that would have to adjust the most if new immigration laws reduced the number of undocumented farmworkers that growers were able or willing to hire. They also are the ones in which growers would stand to benefit the most from replenishment farmworker programs.

---

[5]In this study, "domestic workers" refers to all U.S.-born and naturalized U.S. citizens.

[6]The U.S. Department of Agriculture (1976) reported a dramatic increase in the number of farmworkers migrating within the United States in the year following the termination of the bracero program, under which large numbers of Mexican workers had been recruited to work on U.S. farms. Hayes (1978) found that this jump in migration was accompanied by marked increases in wages for workers in crops that had relied on contract labor.

DATA

The findings reported below are based on a unique set of data on farmworkers surveyed throughout California by the University of California (UC) and the California Employment Development Department (EDD) in August 1983. The sample includes 1,286 farmworkers in 37 counties; workers in all crops and production-related activities were interviewed in each survey area. The sample was designed to represent as closely as possible the statewide distribution of farmworkers.[7]

The survey data provide detailed information on the crop, region, and farm task in which each farmworker was employed at the time of the interview, on farmworkers' legal status, and on wages. For purposes of this study, crops are classified into seven types: citrus, grapes, tree fruit, nuts, field vegetables, field fruit, and other crops. A listing of crops included in each crop category is provided in table 1.

Farmworkers' places of work are classified as either South Coast, Inland Southern California, Central Coast, South San Joaquin Valley, North San Joaquin Valley, Sacramento Valley, North Coast or Other California (see figure 1). The South Coast includes the five coastal counties from San Diego north to Santa Barbara. Inland Southern California consists of the three semiarid counties of Imperial, Riverside, and San Bernardino. The Central Coast includes counties in and around the California Central Valley. The inland counties from San Joaquin south to Fresno comprise the North San Joaquin Valley, while Kern, Kings, and Tulare counties are included in the South San Joaquin Valley. These two regions are irrigated with waters from

---

[7]A detailed description of the survey design and survey instruments is provided in Mines and Martin (1986).

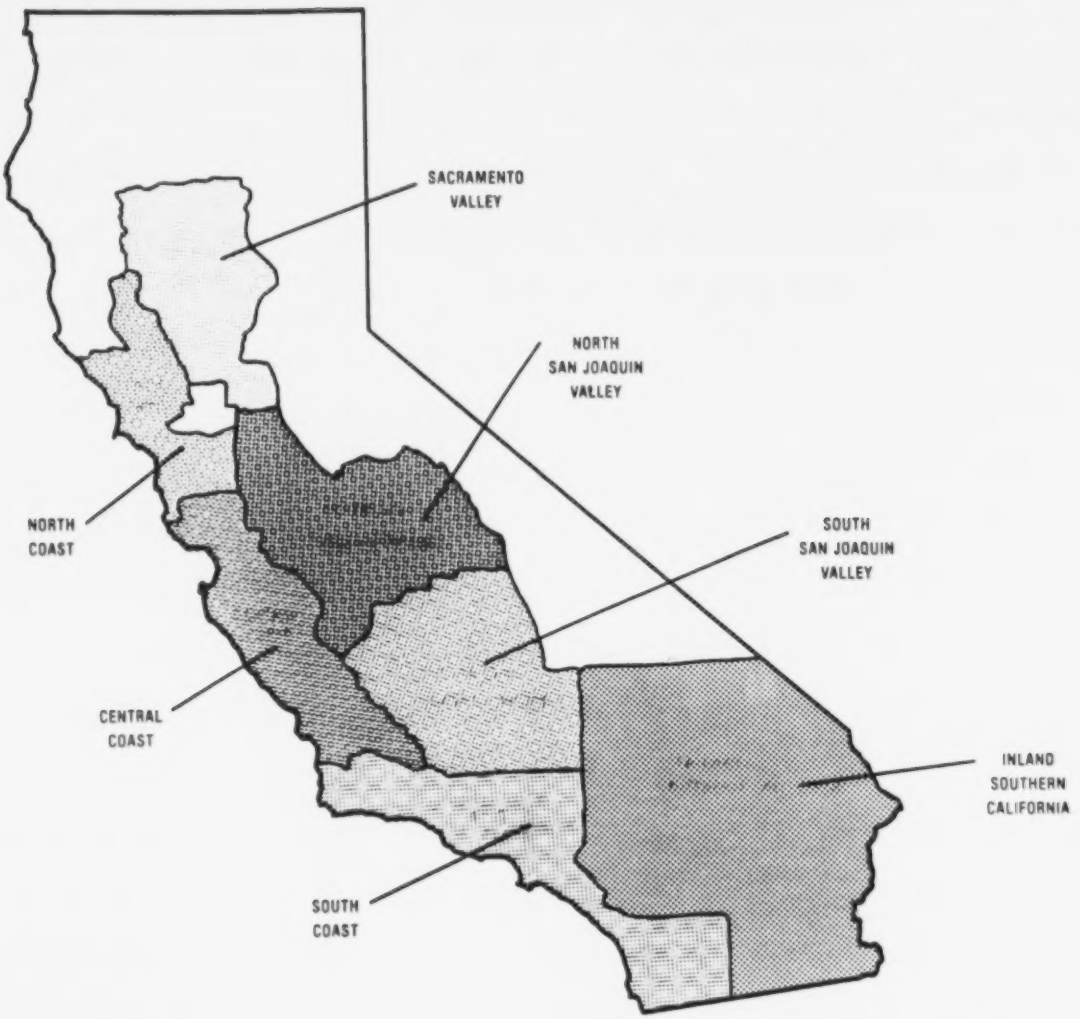
Table 1

UC-EDD Farmworker Survey Crop Types
Included in Each Crop Category

Crop Category	UC-EDD Survey Crop Types
Citrus	Navel Oranges, Valencia Oranges, Lemons, Grapefruit, Oranges, Unspecified Citrus
Grapes	Table Grape, Raisin Grape, Wine Grape, Juice Grape, Unspecified Grape
Other Tree Fruit	Peaches, Plums, Pears, Prunes, Nectarines, Apricots, Apples, Cherries, Figs, Olives, Avocados, Kiwi, Unspecified Deciduous
Nuts	Walnuts, Almonds, Pistachios, Pecans, Unspecified Nuts
Field Vegetables	Lettuce, Carrots, Onions, Peas, Peppers, Spinach, Cucumbers, Cabbage, Brussel Sprouts, Cauliflower, Broccoli, Asparagus, Tomatoes, Sweet Potatoes, Artichokes, Beans, Garlic, Squash, Celery, Potatoes, Mushrooms, Rice, Corn, Sugar Beets, Alfalfa, Wheat, Unspecified Vegetable Row Crops
Field Fruits	Strawberries, Other Berries, Cantaloupes, Watermelons, Honeydews, Unspecified Field Fruits
Other	Cotton, Other Fleurs, Unspecified Non-Vegetable Field Crop, Unknown Crop

Figure 1

Major Agricultural Regions of California



the California state aqueduct. Inland counties from Sacramento northward are categorized as part of the Sacramento Valley region. The North Coast counties include both the Napa and Sonoma wine countries. The category of "Other" includes counties located outside the major agricultural regions of the state.

FOREIGN AND DOMESTIC WORKERS IN CALIFORNIA AGRICULTURE

Nearly three-fourths of all farmworkers surveyed were foreign workers.[8] Twenty-two percent of those interviewed were domestic workers--either U.S.-born or naturalized U.S. citizens.

Concentrations by Crop

The concentrations of foreign and U.S.-citizen workers vary considerably across crops. Table 2 shows that the highest concentrations of foreign workers are found in citrus (93 percent) and in other tree fruits (84 percent). Both of these concentrations are significantly greater than the average for all other crops. Only 7 percent of citrus workers and 12 percent of workers in other tree fruit crops are U.S. citizens. By contrast, grape crops employ a below-average share of foreign workers (67 percent) and an above-average share of U.S. citizens (29 percent). The concentrations of foreign and U.S.-citizen workers in field fruits, vegetables, and nuts are not significantly different from the average concentrations for all other crops.

Interestingly, these numbers do not indicate that foreign workers are concentrated in the most perishable crops. Although it is difficult to categorize all crops in terms of their perishability, the extremes of the spectrum are relatively easy to identify. For example, delicate fruit crops like berries and peaches are more perishable, on average, than citrus, some

---

[8]The foreign worker category includes both legal and illegal aliens.

Table 2

Shares of Foreign and U.S. Citizen Workers in California Hired Farm Labor Force, by Crop[a]

	Share of Foreign Workers	Share of U.S. Citizen Workers
All Crops (N=1195)	0.73	0.22
Citrus (58)	0.93**	0.07**
Grapes (260)	0.67**	0.29**
Other Tree Fruit (129)	0.84**	0.12**
Nuts (40)	0.75	0.22
Field Vegetables (496)	0.72	0.21
Field Fruits (131)	0.74	0.20
Other (81)	0.70	0.27

Source: Urban Institute tabulations of UC-EDD California Farmworker Survey data.

** Denotes that a share is significantly different from the share for all other crops at the .05 level of significance.

a. Foreign workers include workers with green cards and undocumented workers ("workers without papers"). U.S. citizens include both U.S.-born and naturalized U.S. citizens. The rows in the table do not add up to 1.0 because answers to the survey question on legal status were not available for a small minority of workers, either because these workers did not wish to answer or because they claimed to be unsure of their legal status.

varieties of which can be stored on the tree for up to several months. Although table 2 shows large concentrations of foreign workers in the relatively perishable noncitrus tree fruits, the highest concentration is in citrus, which is arguably the least perishable crop category in the table. At the same time, grapes and field fruits, which include such perishable commodities as berries, do not employ above-average shares of foreign workers.

Concentrations by Farm Job

There is convincing evidence that California farmers rely heavily on foreign workers to harvest crops. Table 3 shows that nearly four out of five harvest workers surveyed were foreign. This number is significantly higher than the average for all other farm jobs. Only 16 percent of all harvest workers were U.S. citizens.

The concentrations of foreign and U.S.-citizen workers in different farm jobs also provide some insight into the extent to which foreign workers compete with domestic workers for the most desirable farm jobs. The highest share of U.S. citizens is in the relatively high-skill, high-paying machine-operating jobs. The share of foreign workers in these jobs is well below the average for all other farm tasks. Foreman positions, however, are not more likely to be filled by U.S. citizens than are other farm jobs. This is probably because foreman jobs require the ability to communicate with other farmworkers, most of whom are Spanish-speaking, and U.S. citizens are less likely than foreign workers to have a Spanish-language proficiency.

CONCENTRATIONS OF LEGAL AND ILLEGAL FOREIGN WORKERS

Shares of foreign workers in different crops and farm tasks, without consideration of legal status, provide little information about the extent to which these crops and tasks would be affected by an increased enforcement of

Table 3

Shares of Foreign and U.S. Citizen Workers in California Hired Farm Labor Force, by Farm Task

	Share of Foreign Workers	Share of U.S. Citizen Workers
All Tasks (N=1207)	0.73	0.22
Harvesting (565)	0.79**	0.16**
Tree Pruning (81)	0.68	0.25
Tree Thinning (24)	0.83**	0.00**[a]
Hoeing (112)	0.70	0.21
Irrigating (85)	0.80*	0.16
Crop Sorting (125)	0.64**	0.33**
Planting (29)	0.66	0.28
Machine Operating (152)	0.59**	0.38**
Foremen (34)	0.79	0.21

Source: Urban Institute tabulations of UC-EDD California Farmworker Survey data.

* (**) Denotes that a share is significantly different from the share for all other farm jobs at the .10 (.05) level of significance.

a. No U.S. citizens appear in the tree thinning subsample.

federal immigration laws. If INS authorities are able to enforce the new immigration statute, the largest immediate impact will be felt by crops and farm activities that currently have the highest concentrations of undocumented workers in their workforce.

Interviewers on the UC-EDD survey team attempted to determine farmworkers' legal status, whenever possible, without resorting to direct questioning. However, any survey that collects information on workers' legal status is likely to understate absolute numbers of illegal immigrant workers. Many undocumented workers are reluctant to reveal their true legal status. Others may have purchased documents that are not valid (for example, falsified green cards).

Whereas underreporting of undocumented workers affects estimates of absolute numbers of illegal farmworkers, it does not present a problem for calculating concentrations of undocumented workers in given crops and farm tasks relative to other crops and tasks provided that illegal workers in particular crops and tasks are not systematically more or less willing to reveal their true legal status than illegal workers in other crops and tasks. In this case, estimates of relative concentrations can be treated as a reliable index of the true relative concentrations for comparative purposes.

Tables 4 and 5 present the reported shares of undocumented workers in different crops and farm jobs, respectively. They also tabulate relative concentrations of illegal aliens, given by the ratio of the share of undocumented workers in each crop or task to the share in all other crops or tasks. A ratio of 1.0 indicates that a concentration is no different than the average for all other crops and tasks. A ratio greater than 1.0 indicates that a concentration is above average, and a ratio less than 1.0 means that a concentration is below average.

Table 4

Concentrations of Undocumented Workers
and Workers with Green Cards in
California Hired Farm Labor Force, by Crop[a]

	Share of Undocumented Workers	Share of Workers With Green Cards	Relative Concentration of Undocumented Workers	Relative Concentration of Workers With Green Cards
All Crops	0.19	0.53	1.00	1.00
Citrus	0.43**	0.50	2.35**	0.93
Grapes	0.28**	0.40**	1.60**	0.69**
Other Tree Fruit	0.28**	0.56	1.51**	1.05
Nuts	0.25	0.50	1.30	0.93
Field Vegetables	0.14**	0.58**	0.60**	1.15**
Field Fruits	0.11*	0.63**	0.52*	1.21**
Other	0.09**	0.62	0.43**	1.17

Source: Urban Institute tabulations of UC-EDD California Farmworker Survey data.

* (**) Denotes that an average is significantly different from the average for all other crops at the .10 (.05) level of significance.

a. The numbers in the last two columns of the table are the ratios of the concentration in each crop to the concentration in all other farm crops.

Table 5

Concentrations of Undocumented Workers
and Workers with Green Cards in
California Hired Farm Labor Force, by Farm Task[a]

	Share of Undocumented Workers	Share of Workers With Green Cards	Relative Concentration of Undocumented Workers	Relative Concentration of Workers With Green Cards
All Tasks	0.19	0.53	1.00	1.00
Harvesting	0.25**	0.54	1.62**	1.02
Tree Pruning	0.23	0.44*	1.22	0.82*
Tree Thinning	0.42**	0.42	2.19**	0.78
Hoeing	0.10**	0.60	0.48**	1.13
Irrigating	0.28*	0.52	1.50*	0.97
Crop Sorting	0.10**	0.54	0.47**	1.02
Planting	0.14	0.52	0.70	0.97
Machine Operating	0.09**	0.50	0.41**	0.93
Foremen	0.06**	0.74**	0.30**	1.39**

Source: Urban Institute tabulations of UC-EDD California Farmworker Survey data.

* (**) Denotes that an average is significantly different from the average for all other farm jobs at the .10 (.05) level of significance.

a. The numbers in the last two columns of the table are the ratios of the concentration in each farm task to the concentration in all other farm tasks.

The tables also report concentration ratios for legal immigrant workers. These ratios are biased if our assumptions about underreporting of undocumented workers are true. This is because undocumented workers who conceal their true legal status generally will be misclassified as legal immigrants, and the numbers of undocumented workers thus reported will not necessarily have the same ratio to legal workers in all crops and farm jobs.[9] However, given our assumptions about misreporting of illegal workers, we can identify the direction of this bias and make statements about concentrations of legal foreign workers. The observed relative concentrations of legal foreign workers overstate the true relative concentrations in crops or tasks in which the observed relative concentration of illegal workers exceeds the observed relative concentration of legal workers. The observed concentrations of legal workers understate the true concentrations whenever the relative concentration of legal workers is greater than the relative concentration of illegal workers.[10]

Concentrations by Crop

By far the highest concentration of illegal workers is in citrus (table 4). Even without correcting for underreporting of undocumented workers, this concentration is 43 percent--2.3 times the average for all other crops. In grape crops, which employ a below-average share of foreign workers, an above-average share of foreign workers who are hired are illegal. As a result, grapes have above-average concentrations of undocumented workers.

---

[9]We consider it unlikely that undocumented workers will be misclassified as U.S. citizens.

[10]In general, it appears that the relative concentrations of legal foreign workers in tables 4 and 5 are biased toward 1.0. That is, there is an empirical tendency for ratios below 1.0 to be overstated and for ratios above 1.0 to be understated.

Noncitrus tree fruits are also above-average employers of undocumented workers. Nonetheless, the concentrations of illegal workers in these crops are well below those in citrus. At the other extreme, field vegetables and field fruits have significantly lower concentrations of illegal workers in their workforce, averaging just 60 percent and 52 percent, respectively, of the average for other crops. These crops also have above-average concentrations of workers with green cards. The last column of table 4 indicates that the concentrations of green card workers in field vegetables and field fruits are 15 to 21 percent greater than the average for other crops, and these numbers may understate the true shares of legal workers in these crop categories.

The finding that field fruits rely on a relatively legal workforce, while citrus workers are significantly illegal, indicates that there is very little connection between the perishability of crops and the reliance on undocumented workers. The clearest pattern that emerges from these data is that tree crops are heavy employers of illegal immigrant labor, whereas field crops tend to rely more heavily on legal immigrant workers.

Large-scale replenishment worker programs would directly benefit growers of perishable tree fruits with above-average concentrations of undocumented workers in their workforce. However, the biggest immediate benefits from these programs will go to the less perishable citrus crops, which employ the largest concentrations of illegal workers and therefore are relatively vulnerable to an increased enforcement of federal immigration laws. At the same time, perishable field fruits do not rely heavily on illegal workers. These crops would be less directly affected by a decrease in the illegal immigrant workforce, and they therefore appear to have less need for legalization and replenishment worker programs.

These findings do not imply that a decrease in the supply of undocumented workers in California would affect only crops with large concentrations of illegal workers. As pointed out earlier, if the number of undocumented workers in the labor force decreased, earnings and working conditions for all farmworkers likely would improve as growers competed for available workers and were obligated to provide incentives for legal workers to remain in agriculture. Conversely, an expansive replenishment worker program would tend to benefit all growers by putting downward pressure on agricultural wages.

Undocumented Workers by Farm Job

California growers rely heavily on foreign workers to harvest crops. However, the largest concentration of illegal workers is not in harvesting, where timing--especially in perishable crops--is likely to be critical. Although the concentration of illegal workers in harvesting is above average, it is much lower than the concentration of illegal farmworkers in tree thinning, and it is not much different from the concentrations of illegals in tree pruning and in irrigating (table 5). By contrast, the share of undocumented workers is low in hoeing and thinning of field crops and in crop sorting.

The lowest concentrations of illegal workers are in the highest skill farm jobs. The share of undocumented workers among machine operators is just 41 percent as large as the share in other tasks, while the share of U.S.-citizen workers is nearly twice as high in machine operation as in all other farm jobs. Foremen are only 30 percent as likely to be illegal aliens as are workers in other jobs. They are at least 39 percent more likely to be legal immigrant workers. Legal Hispanic immigrants, in addition to being proficient Spanish speakers, have a secure legal status which makes them preferable to undocumented workers in foreman positions. Overall, there is little evidence

that undocumented workers displace legal workers in foreman and machine-operator jobs.

Regional Labor Market Considerations

A large variability in the concentrations of undocumented workers in different crops may reflect characteristics of the crops such as crop perishability and the difficulty of crop tasks. It might also be explained by characteristics of labor markets in the regions in which different crops are concentrated, including unemployment and wage rates, which reflect the availability of legal workers and their willingness to perform agricultural work.

Concentrations of illegal workers can be compared for the major crops within each region to gain a sense of how regional characteristics and crop characteristics combine to influence the concentration of undocumented workers in the farm labor force. The first row of table 6 shows that while the concentration of undocumented workers in citrus is high overall, it is highest--more than three times the average for all other crop/region combinations--in the south San Joaquin Valley. The concentrations of illegals are also very high in the south coast and north San Joaquin Valley regions (2.9 and 2.6 times the average for all other crops and regions, respectively). By contrast, it is well below average in the inland southern California region. Grapes and tree fruit are the other two crops with high concentrations of illegal workers. For grapes, the inland southern California average is just two-thirds the average for all other crop/region combinations, while the San Joaquin Valley and north coast regions are well above average. Concentrations of undocumented workers in tree fruit are above average in the San Joaquin Valley regions and well below average in both the Sacramento and the central coast regions. In crops that do not rely heavily on illegal

Table 6

Concentrations of Undocumented Farmworkers
by Crop and Region in California[a]

	Coastal Southern California	Inland Southern California	Central Coast	South San Joaquin Valley	North San Joaquin Valley	Sacramento Valley	North Coast	Other California	All Regions
Citrus	2.89	0.60	--	3.24	2.57	--	--	--	2.35**
Grapes	--	0.66	--	1.47	1.60	--	1.89	3.42	1.60**
Other Tree Fruit	--	--	0.79	1.47	1.88	0.62	1.93	2.57	1.51**
Nuts	--	--	--	0.93	1.83	1.28	--	--	1.30
Field Vegetables	0.56	0.10	0.81	1.27	0.38	1.13	0.30	1.40	0.60**
Field Fruits	0.26	--	0.81	1.03	0.57	1.28	--	1.03	0.52*
Other	--	--	0.64	0.57	0.54	0.43	1.03	--	0.43**
All Crops	0.70*	0.24**	0.79	1.62**	1.05	0.94	1.30	1.37	1.00

Source: Urban Institute tabulations of UC-EDD California Farmworker Survey data.

* (**) Denotes that an average is significantly different from the average for all other crops or regions at the .10 (.05) level of significance.

a. The numbers in the table are the ratios of the concentration in each crop and region to the concentration in all other crops and regions. A blank entry indicates a sample size smaller than 10 in the corresponding cell. These are inevitable due to the uneven geographic distribution of some crops.

immigrant labor, average concentrations tend to be highest in the south San Joaquin and Sacramento Valley counties.

The bottom row of the table shows average relative concentrations of illegal workers by region. The concentrations of illegal workers are lowest in inland southern California and in the south coast, central coast, and Sacramento Valley regions. Reliance on illegal workers is highest in the San Joaquin Valley, north coast, and "other" counties. The north coast region has an above-average concentration of illegal workers primarily because it is a major producer of wine grapes, which depend heavily on undocumented workers.

One economic explanation for these regional differences might be that regional concentrations of undocumented workers reflect the availability or scarcity of legal workers. Growers who rely on undocumented workers contend that legal workers are not available to work in the fields, at least not at wages that farmers can afford to pay, and that, if new immigration policies reduce the supply of undocumented workers, temporary workers will be necessary "to keep crops from rotting in the fields" (New York Times, 1986).

A corollary to this argument is that the use of illegal immigrant labor is highest in regions where legal labor is most costly and scarce. Table 7 presents average hourly earnings for legal (U.S. citizen and legal immigrant) farmworkers from the UC-EDD farmworker survey and average unemployment rates compiled from county-level data provided by the California Employment Development Department for each of the seven major agricultural regions in California. The numbers in the table do not support the view that reliance on undocumented workers is highest in regions where legal labor is most costly and scarce. The three regions with the lowest concentrations of illegal immigrants--inland southern California, the south coast, and the central coast--have the three highest average wage rates for legal workers. By

Table 7

Average Hourly Wages for Legal Farmworkers and Unemployment Rates By Region in California[a]

	Relative Concentration of Illegal Aliens	Average Hourly Wages for Legal Farmworkers (dollars)	Average Unemployment Rate (percentage)
Coastal Southern California	0.70	6.59	8.9
Inland Southern California	0.24	5.85	12.5
Central Coast	0.79	7.29	8.2
South San Joaquin Valley	1.62	4.64	13.4
North San Joaquin Valley	1.05	4.60	15.4
Sacramento	0.94	4.50	11.8
North Coast	1.30	4.64	8.7

Source: Urban Institute tabulations of UC-EDD California Farmworker Survey data for hourly earnings, and of 1983 EDD county employment data for unemployment rates.

a. Legal farmworkers include both U.S. citizens and legal aliens.

contrast, the two San Joaquin Valley regions, where concentrations of illegal workers are high, have among the lowest average hourly earnings for legal workers. They also have the highest unemployment rates of all the regions in the table, with more than 13 to 15 percent of the workforce recorded as unemployed by the EDD in 1983.

These numbers suggest that undocumented aliens may displace low-skilled legal workers and may depress wage rates for legal farmworkers in some California farm labor markets. Farmworkers are among the most disadvantaged and impoverished segments of the American workforce. They potentially may be quite vulnerable to federal immigration policies that increase the supply of foreign workers in agriculture.

CONCLUSIONS

The impacts of 1986 U.S. immigration reforms, at least initially, will vary greatly across crops, farm employment activities, and agricultural regions in California. The new federal immigration law is designed to ensure that growers who rely most heavily on undocumented workers will have access to a steady supply of foreign labor to harvest perishable crops. Despite the growers' contention, however, there is no evidence that the most perishable crops and harvest activities depend more heavily on undocumented workers than do other crops and farm tasks. Whereas some growers of perishable crops would have to make major adjustments to a reduction in the illegal alien workforce, many of the most perishable crops rely on a relatively legal workforce, and the least perishable crops have the highest concentrations of undocumented workers. The heavier reliance on legal workers in more perishable crops makes good business sense. Growers of perishable crops, for which the harvest window is quite narrow, have a natural incentive to reduce their risks by

relying on a legal and settled--and therefore more dependable--workforce. In addition, although the share of illegal workers in harvest crews is higher than the average for all tasks, it is well below the average for tree thinning, and it is not significantly higher than the average for other maintenance tasks where having a timely supply of labor is likely to be less critical than in harvesting. There is also significant regional variation in the use of illegal immigrant labor; however, there is no evidence that growers' reliance on undocumented workers is greatest where legal labor is most costly and scarce. The data appear to support the hypothesis that illegal aliens may displace low-skilled legal workers in some California farm labor markets, but there is little to suggest that undocumented workers compete with legal workers for the most desirable farm jobs.

It appears that large-scale farmworker replenishment programs would directly benefit some growers of relatively perishable crops, while having little direct effect on other crops--for example, field fruits--that do not rely heavily on illegal workers. The main direct beneficiaries of temporary worker programs will be growers who presently employ the largest concentrations of undocumented workers and who therefore would have to adjust their hiring practices the most in response to reductions in the illegal immigrant workforce. On average, these are not growers of the most perishable crops. They are located in regions where wages for legal farmworkers currently are lowest and where unemployment rates are generally highest. Indirectly, however, a large-scale replenishment worker program would tend to benefit all growers by exerting downward pressure on agricultural wages.

References

Hayes, S. E. 1978. "Farm and Non-farm Wages and Fringe Benefits, 1948-1977." In Technological Change, Farm Mechanization and Agricultural Employment. Publication 4085, Division of Agricultural Sciences, University of California.

Kossoudji, S., and S. I. Ranney. 1986. "Legal Status and Wage Rates for Mexican Migrants in the United States." Presented at the annual meetings of the Population Association of America, San Francisco, April.

Martin, P. L. 1986. "Western Farm Labor Issues." Contemporary Policy Issues IV: 72-86.

Massey, D. S. 1984. "The Settlement Process Among Mexican Migrants to the United States: New Methods and Findings." In D. Levine, K. Hill, and R. Warren (eds.), Immigration Statistics: A Story of Neglect. Washington, D.C.: National Academy Press.

Mines, R., and P. Martin. 1986. "California Farmworkers--Survey Results of the UC-EDD Survey of 1983." Department of Agricultural Economics, University of California, Davis (mimeo.).

New York Times. 1986. "Rodino Delays Immigration Bill to Seek Compromise on Farm Issue." May 2, p. A18.

North, D. S., and M. F. Houstoun. 1976. The Characteristics and Role of Illegal Aliens in the United States Labor Market: An Exploratory Study. Washington, D.C.: Linton.

Passel, J. S., and K. A. Woodrow. 1984. "Geographic Distribution of Undocumented Immigrants: Estimates of Undocumented Aliens Counted in the 1980 Census by State." International Migration Review 18: 642-671.

Ranney, S., and S. Kossoudji. 1983. "Profiles of Temporary Mexican Labor Migrants in the United States." Population and Development Review 9: 475-493.

Taylor, J. E. 1987. "Undocumented Mexico-U.S. Migration and the Returns to Households in Rural Mexico." American Journal of Agricultural Economics, forthcoming 1987.

U.S. Department of Agriculture. 1985. Economic Indicators of the Farm Sector: Production and Efficiency Statistics, 1983. Washington, D.C.: Government Printing Office.

U.S. Department of Agriculture, Economic Research Service. 1976. The Hired Farm Working Force of 1976. Washington, D.C.: Government Printing Office.

Wall Street Journal. 1983. "Hired Hands. California Growers Rail Against Efforts to Stem Flow of Illegal Aliens." August 4, p. 1.

The Urban Institute

IMPACTS OF IMMIGRATION IN CALIFORNIA

Related Titles

de la Puente, Manuel, and Marc Bendick, Jr., "Employment and Training Programs for Migrant and Refugee Youth: Lessons from the United States Experience." The Urban Institute, August 1983.

Muller, Thomas, The Fourth Wave: California's Newest Immigrants, A Summary. Washington, D. C.: The Urban Institute Press, 1984.

Ruggles, Patricia, "Report on Immigration Status and Eligibility Issues." The Urban Institute, January 1985.

Espenshade, Thomas J., and Tracy Ann Goodis, "Recent Immigrants to Los Angeles: Characteristics and Labor Market Impacts." Urban Institute Policy Discussion Paper PDS-85-1, May 1985.

Koss, Margo, and Harry Hatry, "Human Services Needs and Resources in Long Beach." Urban Institute report to the City of Long Beach, May 1985. Also available from City Manager's Office, City of Long Beach, California.

Ruggles, Patricia, Donald Manson, Kathleen Thomas, and John Trutko, "Refugees and Displaced Persons of the Central American Region." The Urban Institute, June 1985.

Ruggles, Patricia, Michael Fix, and Kathleen Thomas, "Profile of the Central American Population in the United States." The Urban Institute, June 1985.

Manson, Donald M., Thomas J. Espenshade, and Thomas Muller, "Mexican Immigration to Southern California: Issues of Job Competition and Worker Mobility." Urban Institute Policy Discussion Paper PDS-85-2, August 1985.

Connor, Walker (ed.), Mexican-Americans in Comparative Perspective. Washington, D. C.: The Urban Institute Press, 1985.

Ruggles, Patricia, and Michael Fix, "Impacts and Potential Impacts of Central American Migrants on HHS and Related Programs of Assistance." The Urban Institute, September 1985.

Muller, Thomas, and Thomas J. Espenshade, The Fourth Wave: California's Newest Immigrants. Washington, D. C.: The Urban Institute Press, 1985.

de Leeuw, Frank, "The Economic Effects of Immigration: Specification of a Model." Urban Institute Policy Discussion Paper PDS-85-3, December 1985.

Taylor, J. Edward, "Selectivity of Undocumented Mexico-U.S. Migrants and Implications for U.S. Immigration Reform." Urban Institute Policy Discussion Paper PDS-85-4, December 1985.

Goodis, Tracy Ann, and Thomas J. Espenshade, "Immigration to Southern California: Fact and Fiction." Urban Institute Policy Discussion Paper PDS-86-1, May 1986.

Espenshade, Thomas J., "Extensions to Immigration and Stable Population Models." Final report to the National Institute of Child Health and Human Development, National Institutes of Health, June 1986.

Espenshade, Thomas J., "Why the United States Needs Immigrants." Urban Institute Policy Discussion Paper PDS-86-2, August 1986 (revised June 1987).

Taylor, J. Edward, "U.S. Immigration Policy, the Mexican Village Economy, and Agricultural Labor Markets in California." Final report to the National Center for Food and Agricultural Policy, Resources for the Future, Inc., September 1986.

Goodis, Tracy Ann, "Adaptation Processes of Recent Immigrants to the United States: A Review of Demographic and Social Aspects." Urban Institute Policy Discussion Paper PDS-86-3, December 1986.

Goodis, Tracy Ann, "A Layman's Guide to 1986 U.S. Immigration Reform." Urban Institute Policy Discussion Paper PDS-86-4, December 1986.

Arthur, W. Brian, and Thomas J. Espenshade, "U.S. Immigration Policy, Immigrants' Ages, and U.S. Population Size." Urban Institute Policy Discussion Paper PDS-87-1, June 1987.

Taylor, J. Edward, and Thomas J. Espenshade, "Foreign and Undocumented Workers in California Agriculture." Urban Institute Policy Discussion Paper PDS-87-2, June 1987.

How To Inquire about Papers and Publications

For information about obtaining copies of Policy Discussion Papers and other Urban Institute papers, contact the Library/Information Clearinghouse, The Urban Institute, 2100 M Street, N.W., Washington, D. C. 20037; telephone (202) 857-8688 or (202) 857-8687.

For information about obtaining Urban Institute Press publications, contact University Press of America, Inc., 4720 Boston Way, Lanham, Maryland 20706; telephone (301) 459-3366.